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LISTING OF THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (original) An apparatus for routing messages in wireless networks, comprising:

a first plurality of filters, each of said plurality of filters adapted to provide a plurality of frequency-based message signals converted from an optically-based signal;

a plurality of mixers connected to the first plurality of filters, the mixers adapted to mix the plurality of frequency-based message signals with a plurality of sub-carriers to generate a plurality of frequency-based sub-carrier modulated message signals;

a frequency generator connected to the plurality of mixers for providing the plurality of sub-carriers to the mixers;

a combiner connected to the mixers for combining the plurality of frequency-based sub-carrier modulated message signals;

a second plurality of filters connected to the combiner and adapted to receive and group the plurality of frequency-based sub-carrier modulated message signals;

a plurality of optical transmitters, each of said plurality of transmitters connected to one of the second plurality of filters for optically converting and transmitting the frequency-based sub-carrier modulated message signals.

2. (original) The apparatus of claim 1 wherein the each of the first plurality of filters is centered at a pre-defined subcarrier frequency.

3. (original) The apparatus of claim 2 wherein the plurality of filters are RF filters.

4. (original) The apparatus of claim 1 wherein the frequency generator generates and applies a particular sub-carrier frequency to one of the mixers according to control information associated with the frequency-based message signal.

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1   5.   (original) The apparatus of claim 4 wherein the control information is associated

2   with the frequency-based message signal via a generalized MPLS (GMPLS) label.

1   6.   (original) The apparatus of claim 4 wherein the control information is contained

2   in a header portion of the frequency-based message signal.

1   7.   (original) The apparatus of claim 1 wherein the second plurality of filters are

2   bandpass filters.

1   8.   (original) The apparatus of claim 1 further comprising a receiver device for

2   receiving the optically converted and transmitted sub-carrier modulated message signals

3   and filtering the sub-carrier frequencies from the frequency-based message signals.

1   9.   (currently amended) Method for routing messages in wireless networks

2   comprising the steps of:

3   optically receiving one or more composite optical signals;

4   converting said one or more composite optical signals into a plurality of

5   frequency-based message signals;

6   mixing each of the plurality of frequency-based message signals with a

7   corresponding unique sub-carrier associated therewith to generate a plurality of sub-

8   carrier modulated frequency-based signals;

9   combining and grouping said plurality of sub-carrier modulated frequency-based

10   signals; and

11   optically converting and transmitting each group of said plurality of sub-carrier

12   modulated frequency-based signals.

1   10.   (original) The method of claim 9 wherein the step of converting includes filtering

2   the received signals at predetermined sub-carrier frequencies to recover the frequency-

3   based message signals contained therein.

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1 11.   (currently amended) ~~The method of claim 9~~ <u>Method for routing messages in</u>
2 <u>wireless networks comprising the steps of:</u>
3   <u>optically receiving one or more composite optical signals;</u>
4   <u>converting said one or more composite optical signals into a plurality of</u>
5 <u>frequency-based message signals;</u>
6   <u>mixing each of the plurality of frequency-based message signals with a</u>
7 <u>corresponding sub-carrier to generate a plurality of sub-carrier modulated frequency-</u>
8 <u>based signals;</u>
9   <u>combining and grouping said plurality of sub-carrier modulated frequency-based</u>
10 <u>signals; and</u>
11   <u>optically converting and transmitting each group of said plurality of sub-carrier</u>
12 <u>modulated frequency-based signals;</u>
13   wherein the step of mixing includes interpreting control information associated
14 with the frequency-based message signal to determine the appropriate sub-carrier for
15 mixing.

1 12.   (original) The method of claim 11 wherein the control information is contained
2 within a generalized MPLS label of the frequency-based message signal.

1 13.   (original) The method of claim 11 wherein the control information is contained
2 within a header of the frequency-based message signal and assigns a sub-carrier
3 frequency thereto.

1 14.   (new) The method of claim 11, wherein the step of converting includes filtering
2 the received signals at predetermined sub-carrier frequencies to recover the frequency-
3 based message signals contained therein.

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